

RPP-WTP

Project:

MECHANICAL DATA SHEET SHELL AND TUBE HEAT EXCHANGER

Description:

Plant Item No. 24590-PTF-MB-FEP-RBLR-00001A

Data Sheet No.

24590-PTF-MED-FEP-P0009		
rator Reboiler		
P-P0002		
P-00001		

-			
Project No.	24590	P&ID:	24590-PTF-M6-FEP-P0002
Site:	Hanford	Process Data Sht:	24590-PTF-MEC-FEP-00001
Process flow diagram: 24590-PTF-M5-V17T- P0004002		Manufacturer Name	Framatome ANP Northwest Copper Works, Inc.
		General Data	equen by

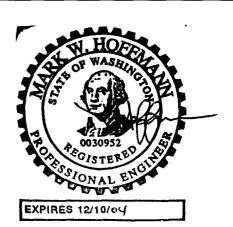
Waste Feed Evapo

General Data				ASSUEP D	
Quality Level	QL-1	TEMA (Class/Type)		В	THE WIP PHONE
Seismic Category	SC-II	Flow Type (Counter current, etc)		*	A VIII
Design Code	ASME VIII, Div 1	Heat Exchanger Duty B	tu/hr	18,350,0	OO ** NIT DATE
Code Stamp	Yes	Heat Exchanger Area	ft ²	2582**	
NB Registration	Yes	ΔT (LMTD/Corrected LMTD)	°F	*	*

Thermal/Hydraulic Data

		I nermai/Hy	draulic Data		
		Shell	Side	Tube Side	
Fluid Name		Ste	am	Waste Feed Recirculation	
Fluid Quantities: Total	lbm/hr	17,0	12**	*	
Condensable Vapor (In/Out)		*	•	*	•
Liquid		*	*	*	*
Noncondensable		*	*	*	*
Temperature (In/Out)	°F	*	*	*	*
Specific Gravity		*	*	*	1.50
Viscosity	cР	*	*	*	12
Molecular Weight, Vapor		*	*	*	*
Molecular Weight, Noncondensable		*	*	*	*
Specific Heat	Btu/lbm-°F	*	*	*	*
Thermal Conductivity	Btu/hr-ft-°F	*	*	*	*
Latent Heat	Btu/lbm @ °F		*		*
Inlet pressure	psia	7.88**		*	
Tube side Velocity	ft/s	*		*	
Pressure Drop (Actual)	psi	*		*	
Fouling Resistance (Min)	hr-ft ² -°F/Btu	0.0015**		0.007 **	

Note: Please note that source, special nuclear and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA), are regulated at the U.S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts, that pursuant to the AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.



This Bound Document Contains a Total of 2 Pages.

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MECHANICAL DATA SHEET SHELL AND TUBE HEAT EXCHANGER

Plant Item No. 24590-PTF-MB-FEP-RBLR-00001A

Data Sheet No. 24590-PTF-MED-FEP-P0009

Mechanical Data

		St	nell Side	Tube Side		
Design Pressure (Max/Min)	psig	50	Full vacuum	50	Full vacuum	
Design Temperature (Max/Min)	°F	311	49	311	49	
Corrosion Allowance	inch	NIA		0.04		
Erosion Allowance	inch	NIA		N	I/A	
Shell OD/ID	inch	72**		Overall Dimensions (H x W x L) inch	72x72x180**	
Total No. of Tubes			822*	Tube OD inch	1.5 ** inch	

Material Data

Shell	SA 240 304L SS	Shell Cover	SA 240 304L SS
Channel/Bonnet	Alloy G-30	Channel Cover	Alloy G-30
Tube	Alloy G-30 (seamless)	Floating Head Cover	NIA
Stationary Tube Sheet	Alloy G-30	Floating Tube Sheet	NIA
Shell Side Gaskets	NIA	Tube Side Gaskets	NIA
Partition Seals	NIA	Baffles/Supports	SA 240 304
Insulation	NIA	Forgings (Shell side)	SA 182 F304 (max. carbon 0.030%)
Bolting	NIA	Forgings (Channel)	Alloy G-30

Construction Data (To be determined by the supplier when not specified by the buyer)

Cross Baffle Type	*	% Baffle Cut (Dia.)	*	Spacing (c/c) inch	•
Bypass Seal Arrangement	•	Longitudinal Seal Type	•	Expansion Joint Type	*
iniet Nozzle ρV ²	*	Bundle Entrance ρV ²		Bundle Exit ρV ²	•
Tube Support Type	*	U-bend Support Type	*	Weight of Bundle Ibf	*
Operating Weight Ibf	*	Full of Water lbf	*	Weight of Shell lbf	•

Notes

- * To be determined by Seller
- ** To be verified by Seller

Notes: (1) All welds are continuous to avoid crevices, weld surface finish is descaled as laid.

- (2) All welded construction on both tube and shell sides
- (3) Tubes welded to the tubesheets with full strength welds.